AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Currently Amended) An image recognition apparatus comprising:

a transparent substrate;

a first recognition section disposed on the transparent substrate, the first recognition section receiving an image pattern from an object and generating a first recognition signal corresponding to the received image pattern; and

a second recognition section disposed on the transparent substrate adjacent to the first recognition section, the second recognition section sensing a biological signal from the object using a capacitance so as to check whether or not the first recognition signal is obtained from a human being.

2. (Original) The apparatus of claim 1, wherein the first recognition section is disposed on a center portion of the transparent substrate and the second recognition section is disposed on a peripheral area surrounding the first recognition section.

3. (Original) The apparatus of claim 2, wherein the first recognition section comprises an image recognition sensor that generates the first recognition signal corresponding to an amount of a reflecting light reflected from the image pattern, the amount of the reflecting light being differently reflected according to a position from which the reflecting light is reflected.

4. (Currently Amended) The apparatus of claim 3, wherein the image recognition sensor comprises:

a sensing thin film transistor (TFT) that outputs a voltage signal corresponding to the reflecting light reflected from the image pattern;

a storage capacitor that charges an electron charge corresponding to the voltage signal input from the sensing TFT; and

a switching TFT that outputs a voltage signal corresponding to the electron charge charged into the storage capacitor in response to a switching signal applied from an external.

5. (Original) The apparatus of claim 2, wherein the second recognition section comprises:

a first biological-signal recognition section disposed on a first end portion of the transparent substrate, which is adjacent to the first recognition section; and

a second biological-signal recognition section disposed on a second end portion of the transparent substrate, which is adjacent to the first recognition section and opposite to the first end portion.

6. (Original) The apparatus of claim 5, wherein the first and second biological-signal recognition sections comprise a capacitance type biological-signal recognition sensor that acts as a capacitor with the object having the image pattern.

7. (Original) The apparatus of claim 6, wherein the first and second biological-signal recognition sections act as a lower electrode of the capacitor and the object having the image pattern acts as an upper electrode of the capacitor.

8. (Currently Amended) The apparatus of claim 7, wherein the biological-signal recognition sensor comprises:

a first thin film transistor (TFT) that outputs a predetermined voltage signal;

a conductive sensing electrode that acts as the capacitor with the upper electrode, the conductive sensing electrode charging an electron charge corresponding to the predetermined voltage signal from the first TFT; and

a second TFT that outputs a voltage signal corresponding to the electron charge charged into the conductive sensing electrode.

9. (Original) The apparatus of claim 1, wherein the image pattern of the object comprises a fingerprint image obtained from the human being.

10. (Original) The apparatus of claim 1, wherein the object directly makes contact with the transparent substrate.

11. (Original) An image recognition apparatus comprising:

a plurality of sensing signal output lines disposed on a transparent substrate, extended in a first direction and arranged in a second direction substantially perpendicular to the first direction;

a plurality of gate lines disposed on the transparent substrate, extended in the second direction and arranged in the first direction;

a plurality of pixel areas defined by two sensing signal output lines adjacent to each other and two gate lines adjacent to each other;

a first recognition section formed on the pixel areas positioned at a center portion of the transparent substrate, the first recognition section receiving an image pattern from an object that makes contact with the transparent substrate and generating a first recognition signal;

a bias line extended in the first direction, arranged in the second direction and adjacent to the sensing signal output lines, the bias line applying a predetermined voltage signal to the first recognition section;

a gate-off line extended in the second direction, arranged in the first direction and adjacent to the gate lines, the gate-off line outputting a gate-off signal to the first recognition section; and

a second recognition section formed on the pixel areas adjacent to the first recognition section, the second recognition section sensing a biological signal from the object so as to check whether or not the first recognition signal is obtained from a human being.

12. (Original) The apparatus of claim 11, wherein the first recognition section comprises an image recognition sensor that generates the first recognition signal corresponding to an amount of a reflecting light reflected from the image pattern, the amount of the reflecting light being differently reflected according to a position from which the reflecting light is reflected.

13. (Currently Amended) The apparatus of claim 12, wherein the first recognition section comprises:

a sensing <u>thin film transistor (TFT)</u> that outputs a voltage signal corresponding to the reflecting light reflected from the image pattern;

a storage capacitor that charges an electron charge corresponding to the voltage signal input from the sensing TFT; and

a switching TFT that outputs a voltage signal corresponding to the electron charge charged into the storage capacitor in response to a switching signal applied from an external.

14. (Original) The apparatus of claim 13, wherein the sensing TFT comprises:

a drain electrode connected to the bias line;

a gate electrode connected to the gate-off line; and

a source electrode connected to the storage capacitor.

15. (Original) The apparatus of claim 13, wherein the switching TFT comprises:

a gate electrode connected to an adjacent gate line;

a drain electrode connected to an adjacent sensing signal output line; and

a source electrode connected to the storage capacitor.

16. (Original) The apparatus of claim 11, wherein the second recognition section comprises:

a first biological-signal recognition sensor disposed on a first end portion of the transparent substrate; and

a second biological-signal recognition sensor disposed on a second end portion of the transparent substrate, which is opposite to the first end portion.

17. (Original) The apparatus of claim 16, wherein the first and second biological-signal recognition sensors comprise a capacitance type biological-signal recognition sensor that acts as a capacitor with the object having the image pattern.

18. (Original) The apparatus of claim 17, wherein the first and second biological-signal recognition sensors act as a lower electrode of the capacitor and the object having the image pattern acts as a upper electrode of the capacitor.

19. (Currently Amended) The apparatus of claim 17, wherein the biological-signal recognition sensor comprises:

a first <u>thin film transistor (TFT)</u> that outputs a predetermined voltage signal;

a conductive sensing electrode that acts as the capacitor with the upper electrode, the conductive sensing electrode charging an electron charge corresponding to the predetermined voltage signal from the first TFT; and

a second TFT that outputs a voltage signal corresponding to the electron charge charged into the conductive sensing electrode.

20. (Original) The apparatus of claim 19, wherein the first TFT comprises:

a gate electrode connected to an adjacent gate line;

a drain electrode commonly connected to the gate line with the gate electrode; and

a source electrode connected to the conductive sensing electrode.

21. (Original) The apparatus of claim 19, wherein the second TFT comprises:

a gate electrode connected to an adjacent gate line;

a drain electrode connected to the sensing signal output line; and

a source electrode connected to the conductive sensing electrode.

22. (Original) The apparatus of claim 11, wherein the image pattern of the object comprises a fingerprint image obtained from the human being.